

REMARKS

The Examiner rejected Claims 1-4, 6-7, 11, and 13-16 under 35 U.S.C. 103(a) as being unpatentable over Jamneala et al. (U.S. Patent No. 6,804,807), in view of Piratelli-Filho et al. (Uncertainty Evaluation in small angle Calibration using ISO GUM Approach and Monte Carlo Method, June 2003). Applicant traverses the rejection.

Examiner's Burden under 35 U.S.C. 103

To sustain a rejection under 35 U.S.C. 103, the Examiner must show that the combined references teach each of the elements of the claim or that there is some motivation in the art for altering one of the teachings to arrive at the combined set of teachings. "The mere fact that a reference could be modified to produce the patented invention would not make the modification obvious unless it is suggested by the prior art." (*Libbey-Owens-Ford v. BOC Group*, 4 USPQ 2d 1097, 1103). "When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference" (*In re Rijckaert*, 28 USPQ2d, 1955, 1957). In addition, the Examiner must show that there is some motivation in the art that would cause someone of ordinary skill to combine the references, and that in making the combination, there was a reasonable expectation of success. Where the claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under section 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success... Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure. *In re Vaeck*, 20 USPQ2d 1438, 1442(CAFC 1991).

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness

without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

With respect to claim 1, the Examiner argues that all of the elements of the claimed invention are taught in the combined references and that one would be motivated to apply the method of Piratelli-Filho to the system of Jamneala because it would provide expanded uncertainty results, which would simplify analysis. Specifically, the Examiner states that Jamneala teaches all of the limitations of claim 1 except for explicitly using the term measurement uncertainty and disclosing their variation in accordance with associated probability distributions.

Jamneala teaches a method for modeling a ground-signal-ground probe to correct for unbalanced ground currents when the probe is used to measure a known circuit. The model and procedure taught in Jamneala provides values for the inductances L_{corr} and mutual inductance M_{corr} shown in Figure 1C, so that measurements made with the probe can be corrected when the probe is used to measure the circuit in question. The parameters are determined by simulating the combination of the circuit in question connected to the probe in circuit simulator and searching for the parameter values that provide the closest match to the signals that are expected at the various nodes at the probe pads.

The examiner admits that Jamneala does not teach that any of the parameters in the circuit model or the probe model have uncertainties that are characterized by known probability distributions. Absent such known probability distributions, there is no way to apply the teachings of Piratelli-Filho to the method of Jamneala, and hence, there is no reasonable expectation of success in making the proposed combination.

The only parameters in the model that have unknown values at the beginning of the procedure are the model parameters discussed above. The system of Jamneala determines unique values for these by optimizing the values such that the best-fit is obtained between simulated transmission characteristics and the measured transmission characteristics obtained with

calibrated probes when the model is added to the circuit model for the circuit in question (see sections IV and V of Piratelli-Filho). The model parameters have unique values, and hence, are not characterized by known probability distributions. Furthermore, there is no teaching that the circuit in question has any parameters whose values vary according to known probability distributions. Without such known probability distributions describing the random variation of the parameters in question, there is no way to implement the teachings of Piratelli-Filho in the system of Jamneala. Hence, Applicant submits that the Examiner has failed to make a *prima facie* case for obviousness with respect to claim 1 and the claims dependent therefrom.

With respect to claims 2 and 3, the Examiner points to the statement that the ADS(?) simulator is used as evidence that both a time-domain simulation and a harmonic balance simulation engine are utilized. The mode of simulation is not explicitly taught in Jamneala. While one could modify the teachings of Jamneala to utilize one or the other type of simulation engine, the Examiner has not pointed to any motivation for choosing one or the other, much less the other modes of operation provided by the ADS simulator. Hence, there are additional grounds for allowing claims 2 and 3.

With respect to claim 13, the Examiner states that the references “substantially teach” the step of running at a first operating condition and then running at a second operating condition. The Examiner points to the passage from col. 6, line 41 to col. 8, line 23 of Jamneala and to Figures 1 –4 of Piratelli-Filho. Applicant can find no teaching in the cited passage of Jamneala with respect to running a first operating condition to collect a first significant number of results and then running at a second operating condition to collect a significant number of second results and evaluating a second measurement uncertainty of the selecting parameter. Similarly, Applicant can find no such teaching in Piratelli-Filho. Accordingly, there are additional grounds for allowing claim 13.

With respect to claim 14, the Examiner maintains that the same two passages cited above with respect to the rejection of claim 13 also teach running the first test model simulation using a first type of simulation engine and then running a second simulation on a second type of

simulation engine. As noted above, Jamneala is silent as to the type of simulation engine. At most Jamneala teaches one type of simulation engine, and hence, could not teach switching types in the middle of the simulation. Hence, there are additional grounds for allowing claim 14.

The Examiner rejected Claim 5 under 35 U.S.C. 103(a) as being unpatentable over Jamneala et al. (U.S. Patent No. 6,804,807), in view of Piratelli-Filho et al. (Uncertainty Evaluation in small angle Calibration using ISO GUM Approach and Monte Carlo Method, June 2003), and further in view of Helisto et al. (Measurement Uncertainty in the 1/f noise region: Zener Voltage Standards, IEEE 2000). Applicant traverses the rejection.

The Examiner states that the combination of Jamneala and Piratelli-Filho teach the limitations of claim 5 except for the plurality of probability distributions including a noise term. The Examiner looks to Helisto for the missing teachings. The Examiner maintains that it would have been obvious to apply the uncertainty measurement method of Helisto et al. to Jamneala/Piratelli-Filho to “enable the measurements down to the fundamental noise limit of metrological devices (see pg.402)”.

First, as noted above with respect to claim 1, from which claim 5 depends, Applicant submits that Jamneala in view of Piratelli-Filho does not teach the limitations of the base claim. Helisto does not provide the missing teachings.

Second, the issue is not whether noise terms are known to the art, but rather whether one of ordinary skill in the art would be motivated to add such a term to the method of Jamneala. The Examiner has not pointed to any motivation for modifying the teachings of Jamneala to include a noise term that varies according to a known probability distribution.

Hence, Applicant submits that the Examiner has failed to make a *prima facie* case for obviousness with respect to claim 5.

Allowable Subject Matter

Applicant notes that claims 8-10 and 12 are allowed.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Calvin B. Ward". The signature is fluid and cursive, with the first name "Calvin" being more prominent.

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Date: July 1, 2010

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